AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Original) An apparatus for inspecting a film carrier tape for mounting electronic component in which a plurality of electronic component mounting portions is provided in multiple stripes in a transverse direction, comprising:

an unwinding device for unwinding the film carrier tape for mounting electronic component in the multiple stripes in which the individual film carrier tapes for mounting electronic component previously cut and separated into the individual stripes are wound upon an unwinding reel, respectively;

an inspecting section for simultaneously inspecting the film carrier tapes for mounting electronic component, which are cut into the stripes, while causing them to run in parallel with each other; and

a take-up device for simultaneously taking up the film carrier tapes for mounting electronic component cut into the stripes, which are inspected in the inspecting section upon a plurality of take-up reels attached to an identical take-up shaft in parallel, respectively.

2. (Original) An apparatus for inspecting a film carrier tape for mounting electronic component in which a plurality of electronic component mounting portions is provided in multiple stripes in a transverse direction, comprising:

an unwinding device for unwinding the film carrier tape for mounting electronic component in the multiple stripes in which the individual film carrier tapes for mounting electronic component previously cut into the stripes are wound upon an unwinding reel, respectively;

an inspecting section for simultaneously inspecting the film carrier tapes for mounting electronic component, which are cut into the stripes, while causing them to run in parallel with each other; and

a take-up device for simultaneously taking up the film carrier tapes for mounting electronic component cut into the stripes, which are inspected in the inspecting section, upon a plurality of take-up reels attached to separate take-up shafts in parallel, respectively.

3. (Original) An apparatus for inspecting a film carrier tape for mounting electronic component in which a plurality of electronic component mounting portions is provided in multiple stripes in a transverse direction, comprising:

an unwinding device for unwinding the film carrier tape for mounting electronic component in the multiple stripes which are wound upon an unwinding reel;

a slit device for cutting the film carrier tapes for mounting electronic component in the multiple stripes, which are unwound from the unwinding device, into individual film carrier tapes for mounting electronic component in stripes;

an inspecting section for causing the film carrier tapes for mounting electronic component, which are cut into the stripes by the slit device, to run in parallel with each other and simultaneously inspecting them; and

a take-up device for simultaneously taking up the film carrier tapes for mounting electronic component cut into the stripes, which are inspected in the inspecting section, upon a plurality of take-up reels attached to an identical take-up shaft in parallel, respectively.

4. (Original) An apparatus for inspecting a film carrier tape for mounting electronic component in which a plurality of electronic component mounting portions is provided in multiple stripes in a transverse direction, comprising:

an unwinding device for unwinding the film carrier tape for mounting electronic component in the multiple stripes which are wound upon an unwinding reel;

a slit device for cutting the film carrier tapes for mounting electronic component in the multiple stripes, which are unwound from the unwinding device, into individual film carrier tapes for mounting electronic component in stripes;

an inspecting section for causing the film carrier tapes for mounting electronic component, which are cut into the stripes by the slit device, to run in parallel with each other and simultaneously inspecting them; and

a take-up device for simultaneously taking up the film carrier tapes for mounting electronic component cut into the stripes, which are inspected in the inspecting section, upon a plurality of take-up reels attached to separate take-up shafts in parallel, respectively.

5. (Currently Amended) The apparatus for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 1 to 4~~claim 1, wherein the inspecting section includes a guide member for causing film carrier tapes for mounting electronic component, which are cut into stripes, to run in parallel with each other,

the guide member comprising:

a side guide portion on both ends which serves to guide both end side portions of the film carrier tape for mounting electronic component on an outermost side; and

an adjacent part guide portion, which is protruded to guide adjacent side portions of the film carrier tapes for mounting electronic component cut into the stripes between the guide portions on the both ends.

6. (Currently Amended) The apparatus for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 1 to 5~~claim 1, further comprising a drive gear for conveying the film carrier tapes for mounting electronic component, which are unwound from the unwinding device and cut into the stripes by the slit device, while causing them to run in parallel with each other,

the drive gear including:

a both end gear mated with a sprocket hole in side portions on both ends of the film carrier tape for mounting electronic component on the outermost side; and

an intermediate gear mated with a sprocket hole provided in the adjacent side portions of the film carrier tape for mounting electronic component cut into the stripes between the both end gears.

7. (Original) The apparatus for inspecting a film carrier tape for mounting electronic component according to claim 6, further comprising a guide roller, the guide roller including:

a side guide protruded portion on both ends which serves to guide both end side portions of the film carrier tape for mounting electronic component on the outermost side; and

an adjacent part guide protruded portion protruded to separate and guide adjacent side portions of the film carrier tapes for mounting electronic component cut into the stripes between the side guide protruded portions on the both ends.

8. (Currently Amended) The apparatus for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 1, 3 and 5 to 7~~claim 1, wherein a plurality of take-up reels, which are attached to the identical take-up shaft of the take-up device in parallel with each other, are fixed into through holes provided in the vicinity of centers of the reels by means of removable engaging bar members.

9. (Currently Amended) The apparatus for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 2 and 4 to 7~~claim 2, wherein a plurality of take-up reels, which are attached to the separate take-up shafts of the take-up device in parallel with each other, are fixed into through holes provided in the vicinity of centers of the reels by means of removable engaging bar members, respectively.

10. (Currently Amended) The apparatus for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 1, 3 and 5 to 8~~claim 1, wherein the identical take-up shaft of the take-up device is constituted by an air shaft capable of expanding to increase a diameter thereof upon receipt of supply of air, and

a plurality of take-up reels attached to the take-up shaft in parallel with each other is thus fixed to each other.

11. (Currently Amended) The apparatus for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 2, 4 to 7 and 9~~claim 2, wherein the separate take-up shafts of the take-up device are constituted by an air shaft capable of expanding to increase a diameter thereof upon receipt of supply of air, and

a plurality of take-up reels attached to the take-up shaft in parallel with each other is thus fixed, respectively.

12. (Currently Amended) The apparatus for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 1 to 11~~claim 1, wherein the inspecting section includes a magnifying lens device for magnifying the film carrier tape for mounting electronic component in order to carry out an inspection,

the magnifying lens device including a magnifying lens for magnifying, in a total width direction, the film carrier tapes for mounting electronic component, which are cut into the stripes and running in parallel with each other.

13. (Currently Amended) The apparatus for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 1 to 12~~claim 1, wherein the magnifying lens device has a magnification of 1.4 or more at an enlargement ratio of a length.

14. (Currently Amended) The apparatus for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 1 to 13~~claim 1, wherein separate dancer rollers are provided for the film carrier tapes for mounting electronic component, which are cut into the stripes, between the unwinding device and the inspecting section, respectively.

15. (Currently Amended) The apparatus for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 1 to 14~~claim 1, wherein separate dancer rollers are provided for the film carrier tapes for mounting electronic component, which are cut into the stripes, between the take-up device and the inspecting section, respectively.

16. (Currently Amended) The apparatus for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 1 to 13 and 15~~claim 1, wherein an identical dancer roller is provided for the film carrier tapes for mounting electronic component, which are cut into the stripes, between the unwinding device and the inspecting section.

17. (Currently Amended) The apparatus for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 1 to 14 and 16~~claim 1, wherein an identical dancer roller is provided for the film carrier tapes for mounting electronic component, which are cut into the stripes, between the take-up device and the inspecting section.

18. (Currently Amended) The apparatus for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 14 to 17~~claim 14, further comprising a looseness control device for detecting a position of the dancer roller to control an amount of looseness of the film carrier tape for mounting electronic component.

19. (Original) The apparatus for inspecting a film carrier tape for mounting electronic component according to claim 18, wherein the looseness control device includes a guide member for separately changing a guide path for the film carrier tape for mounting electronic component in each stripe which is to be guided by the dancer roller.

20. (Original) A method for inspecting a film carrier tape for mounting electronic component in which a plurality of electronic component mounting portions is provided in multiple stripes in a transverse direction, comprising the steps of:

unwinding, from an unwinding device, the film carrier tape for mounting electronic component in the multiple stripes in which the individual film carrier tapes for mounting electronic component previously cut into the stripes are wound upon an unwinding reel, respectively;

simultaneously inspecting the film carrier tapes for mounting electronic component, which are cut into the stripes, in an inspecting section while causing them to run in parallel with each other; and

simultaneously taking up the film carrier tapes for mounting electronic component cut into the stripes, which are inspected in the inspecting section, upon a plurality of take-up reels attached to an identical take-up shaft of a take-up device in parallel, respectively.

21. (Original) A method for inspecting a film carrier tape for mounting electronic component in which a plurality of electronic component mounting portions is provided in multiple stripes in a transverse direction, comprising the steps of:

unwinding, from an unwinding device, the film carrier tape for mounting electronic component in the multiple stripes in which the individual film carrier tapes for mounting electronic component previously cut into the stripes are wound upon an unwinding reel, respectively;

simultaneously inspecting the film carrier tapes for mounting electronic component, which are cut into the stripes, in an inspecting section while causing them to run in parallel with each other; and

simultaneously taking up the film carrier tapes for mounting electronic component, which are cut into the stripes, which are inspected in the inspecting section, upon a plurality of take-up reels attached to separate take-up shafts of a take-up device in parallel, respectively.

22. (Original) A method for inspecting a film carrier tape for mounting electronic component in which a plurality of electronic component mounting portions is provided in multiple stripes in a transverse direction, comprising the steps of:

unwinding, from an unwinding device, the film carrier tapes for mounting electronic component in the multiple stripes which are wound upon an unwinding reel;

cutting the film carrier tapes for mounting electronic component in the multiple stripes, which are unwound from the unwinding device, into individual film carrier tapes for mounting electronic component in stripes by a slit device;

causing the film carrier tapes for mounting electronic component, which are cut into the stripes by the slit device, to run in parallel with each other and simultaneously inspecting them in an inspecting section; and

simultaneously taking up the film carrier tapes for mounting electronic component cut into the stripes which are inspected in the inspecting section, upon a plurality of take-up reels attached to an identical take-up shaft of a take-up device in parallel, respectively.

23. (Original) A method for inspecting a film carrier tape for mounting electronic component in which a plurality of electronic component mounting portions is provided in multiple stripes in a transverse direction, comprising the steps of:

unwinding, from an unwinding device, the film carrier tape for mounting electronic component in the multiple stripes which are wound upon an unwinding reel;

cutting the film carrier tapes for mounting electronic component in the multiple stripes which are unwound from the unwinding device, into individual film carrier tapes for mounting electronic component in stripes by a slit device;

causing the film carrier tapes for mounting electronic component, which are cut into the stripes by the slit device, to run in parallel with each other and simultaneously inspecting them in an inspecting section; and

simultaneously taking up the film carrier tapes for mounting electronic component cut into the stripes which are inspected in the inspecting section, upon a plurality of take-up reels attached to separate take-up shafts of a take-up device in parallel, respectively.

24. (Currently Amended) The method for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 20 to 23~~claim 20, wherein the inspecting section includes a guide member for causing film carrier tapes for mounting electronic component, which are cut into stripes, to run in parallel with each other,

the guide member comprising:

a side guide portion on both ends which serves to guide both end side portions of the film carrier tape for mounting electronic component on an outermost side; and

an adjacent part guide portion, which is protruded to guide adjacent side portions of the film carrier tapes for mounting electronic component cut into the stripes between the guide portions on the both ends.

25. (Currently Amended) The method for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 20 to 24~~claim 20, further comprising a drive gear for conveying the film carrier tapes for mounting electronic component, which are unwound from the unwinding device and cut into the stripes by the slit device, while causing them to run in parallel with each other,

the drive gear including:

a both end gear mated with a sprocket hole in side portions on both ends of the film carrier tape for mounting electronic component on the outermost side; and

an intermediate gear mated with a sprocket hole provided in the adjacent side portions of the film carrier tape for mounting electronic component cut into the stripes between the both end gears.

26. (Original) The method for inspecting a film carrier tape for mounting electronic component according to claim 25, further comprising a guide roller,

the guide roller including:

a side guide protruded portion on both ends which serves to guide both end side portions of the film carrier tape for mounting electronic component on an outermost side; and

an adjacent part guide protruded portion protruded to separate and guide adjacent side portions of the film carrier tapes for mounting electronic component cut into the stripes between the side guide protruded portions on the both ends.

27. (Currently Amended) The method for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 20, 22 and 24 to 26~~claim 20, wherein a plurality of take-up reels, which are attached to the identical take-up shaft of the take-up device in parallel with each other, are fixed into through holes provided in the vicinity of centers of the reels by means of removable engaging bar members.

28. (Currently Amended) The method for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 21 and 23 to 26~~claim 21, wherein a plurality of take-up reels, which are attached to the separate take-up shafts of the take-up device in parallel with each other, are fixed into through holes provided in the vicinity of centers of the reels by means of removable engaging bar members, respectively.

29. (Currently Amended) The method for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 20, 22 and 24 to 27~~claim 20, wherein the identical take-up shaft of the take-up device is constituted by an air shaft capable of expanding to increase a diameter thereof upon receipt of supply or air, and

a plurality of take-up reels attached to the take-up shaft in parallel with each other is thus fixed to each other.

30. (Currently Amended) The method for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 21, 23 to 26 and 28~~claim 21, wherein the separate take-up shafts of the take-up device are constituted by an air shaft capable of expanding to increase a diameter thereof upon receipt of supply of air, and

a plurality of take-up reels attached to the take-up shaft in parallel with each other is thus fixed, respectively.

31. (Currently Amended) The method for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 20 to 30~~claim 20, wherein the inspecting section includes an illuminating device for irradiating a light on the film carrier tape for mounting electronic component in order to carry out an inspection,

the illuminating device having two illuminating lamps, which are provided apart from each other and are serving to irradiate a light on an inspecting position from rearward and above to be simultaneously focused with respect to the film carrier tapes for mounting electronic component, which are cut into the stripes and run in parallel with each other.

32. (Currently Amended) The method for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 20 to 31~~claim 20, wherein the inspecting section includes a magnifying lens device for magnifying the film carrier tape for mounting electronic component in order to carry out an inspection,

the magnifying lens device including a magnifying lens for magnifying, in a total width direction, the film carrier tapes for mounting electronic component, which are cut into the stripes and running in parallel with each other.

33. (Currently Amended) The method for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 20 to 32~~claim 20, wherein the magnifying lens device has a magnification of 1.4 or more at an enlargement ratio of a length.

34. (Currently Amended) The method for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 20 to 33~~claim 20, wherein separate dancer rollers are provided for the film carrier tapes for mounting electronic component, which are cut into the stripes, between the unwinding device and the inspecting section.

35. (Currently Amended) The method for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 20 to 34~~claim 20, wherein separate dancer rollers are provided for the film carrier tapes for mounting electronic component, which are cut into the stripes, between the take-up device and the inspecting section.

36. (Currently Amended) The method for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 20 to 33 and 35~~claim 20, wherein an identical dancer roller is provided for the film carrier tapes for mounting electronic component, which are cut into the stripes, between the unwinding device and the inspecting section.

37. (Currently Amended) The method for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 20 to 34 and 36~~claim 20, wherein an identical dancer roller is provided for the film carrier tapes for mounting electronic component, which are cut into the stripes, between the take-up device and the inspecting section.

38. (Currently Amended) The method for inspecting a film carrier tape for mounting electronic component according to ~~any of claims 34 to 37~~claim 34, further comprising a looseness control device for detecting a position of the dancer roller to control an amount of looseness of the film carrier tape for mounting electronic component.

39. (Original) The method for inspecting a film carrier tape for mounting electronic component according to claim 38, wherein the looseness control device includes a guide member for separately changing a guide path for the film carrier tape for mounting electronic component in each stripe which is to be guided by the dancer roller.

40. (New) The apparatus for inspecting a film carrier tape for mounting electronic component according to claim 2, wherein the inspecting section includes a guide member for causing film carrier tapes for mounting electronic component, which are cut into stripes, to run in parallel with each other,

the guide member comprising:

a side guide portion on both ends which serves to guide both end side portions of the film carrier tape for mounting electronic component on an outermost side; and

an adjacent part guide portion, which is protruded to guide adjacent side portions of the film carrier tapes for mounting electronic component cut into the stripes between the guide portions on the both ends.

41. (New) The apparatus for inspecting a film carrier tape for mounting electronic component according to claim 3, wherein the inspecting section includes a guide member for causing film carrier tapes for mounting electronic component, which are cut into stripes, to run in parallel with each other,

the guide member comprising:

a side guide portion on both ends which serves to guide both end side portions of the film carrier tape for mounting electronic component on an outermost side; and

an adjacent part guide portion, which is protruded to guide adjacent side portions of the film carrier tapes for mounting electronic component cut into the stripes between the guide portions on the both ends.

42. (New) The apparatus for inspecting a film carrier tape for mounting electronic component according to claim 4, wherein the inspecting section includes a guide member for causing film carrier tapes for mounting electronic component, which are cut into stripes, to run in parallel with each other,

the guide member comprising:

a side guide portion on both ends which serves to guide both end side portions of the film carrier tape for mounting electronic component on an outermost side; and

an adjacent part guide portion, which is protruded to guide adjacent side portions of the film carrier tapes for mounting electronic component cut into the stripes between the guide portions on the both ends.

43. (New) The apparatus for inspecting a film carrier tape for mounting electronic component according to claim 2, further comprising a drive gear for conveying the film carrier tapes for mounting electronic component, which are unwound from the unwinding device and cut into the stripes by the slit device, while causing them to run in parallel with each other,

the drive gear including:

a both end gear mated with a sprocket hole in side portions on both ends of the film carrier tape for mounting electronic component on the outermost side; and

an intermediate gear mated with a sprocket hole provided in the adjacent side portions of the film carrier tape for mounting electronic component cut into the stripes between the both end gears.

44. (New) The apparatus for inspecting a film carrier tape for mounting electronic component according to claim 3, further comprising a drive gear for conveying the film carrier tapes for mounting electronic component, which are unwound from the unwinding device and cut into the stripes by the slit device, while causing them to run in parallel with each other,

the drive gear including:

a both end gear mated with a sprocket hole in side portions on both ends of the film carrier tape for mounting electronic component on the outermost side; and

an intermediate gear mated with a sprocket hole provided in the adjacent side portions of the film carrier tape for mounting electronic component cut into the stripes between the both end gears.

45. (New) The apparatus for inspecting a film carrier tape for mounting electronic component according to claim 4, further comprising a drive gear for conveying the film carrier tapes for mounting electronic component, which are unwound from the unwinding device and cut into the stripes by the slit device, while causing them to run in parallel with each other,

the drive gear including:

a both end gear mated with a sprocket hole in side portions on both ends of the film carrier tape for mounting electronic component on the outermost side; and

an intermediate gear mated with a sprocket hole provided in the adjacent side portions of the film carrier tape for mounting electronic component cut into the stripes between the both end gears.

46. (New) The apparatus for inspecting a film carrier tape for mounting electronic component according to claim 5, further comprising a drive gear for conveying the film carrier tapes for mounting electronic component, which are unwound from the unwinding device and cut into the stripes by the slit device, while causing them to run in parallel with each other,

the drive gear including:

a both end gear mated with a sprocket hole in side portions on both ends of the film carrier tape for mounting electronic component on the outermost side; and

an intermediate gear mated with a sprocket hole provided in the adjacent side portions of the film carrier tape for mounting electronic component cut into the stripes between the both end gears.